

ABSTRACT

A MOS isolation coupler is formed on a semiconductor chip by a CMOS process and comprises an inductor coil for generating a magnetic field in response to an input signal applied to terminals thereof. A MAGFET having a split drain formed by
5 respective drain portions is formed on the semiconductor chip below the inductor coil, so that a current difference is induced between the drain currents in the drain portions which is proportional to the strength of the magnetic field generated by the inductor coil resulting from the input signal. The MAGFET is formed prior to the inductor coil. An
10 oxide isolating layer is provided over the MAGFET, and the inductor coil is formed on the oxide layer. The depth of the oxide layer is sufficient for providing the desired amount of electrical isolation, while at the same time locating the inductor coil sufficiently close to the MAGFET so that the magnetic field generated by the inductor coil, extending axially through the inductor coil cuts the channel of the MAGFET
15 substantially perpendicularly.